

by claim 1 wherein said main body is formed from a main body blank.

5. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said main body is formed entirely from a main body blank.

6. (Newly Added) The fabricated vehicle axle as defined by claim 4 wherein said main body blank used to form said main body comprises a rectangular strip of material.

7. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said main body is formed from a roll formed channel.

8. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said bottom plate is formed from a bottom plate blank.

9. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said bottom plate is formed entirely from a bottom plate blank.

10. (Newly Added) The fabricated vehicle axle as defined by claim 8 wherein said bottom plate blank used to form said bottom plate comprises a rectangular strip of material.

11. (Newly Added) The fabricated vehicle axle as defined by claim 8 wherein said bottom plate blank is rolled to have a flat top surface and slightly rounded corners on a surface opposing said flat top surface.

12. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said bottom plate includes a first head portion positioned at said first end thereof and a second head portion positioned at a second end thereof.

13. (Newly Added) The fabricated vehicle axle as defined by claim 12 wherein said bottom plate includes a first

*Accompanying*

transition zone portion adjacent to said first head portion and extending therefrom at a first bend, a body portion adjacent to said first transition zone portion and extending therefrom at a second bend, a second transition zone portion adjacent to said body portion and extending therefrom at a third bend, said second transition zone portion also being adjacent to said second head portion and extending therefrom at a fourth bend.

14. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said bottom plate is of constant thickness.

15. (Newly Added) The fabricated vehicle axle as defined by claim 14 wherein said constant thickness of said bottom plate is within a range of twelve to sixteen millimeters.

*Counts*  
16. (Newly Added) The fabricated vehicle axle as defined by claim 13 wherein said bottom plate includes a first angle formed by said second bend and a second angle formed by said third bend, said first and second angles being within a range of forty degrees to fifty degrees.

17. (Newly Added) The fabricated vehicle axle as defined by claim 16 wherein said first angle is forty-five degrees and said second angle is forty-five degrees.

18. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said first transition zone portion includes a tie rod clearance region.

19. (Newly Added) The fabricated vehicle axle as defined by claim 18 wherein said tie rod clearance region is configured in a waist-like shape in said transition zone portion.

20. (Newly Added) The fabricated vehicle axle as defined by claim 12 wherein said first king pin bore extends through said first head portion.

21. (Newly Added) The fabricated vehicle axle as defined

by claim 1 wherein said bottom plate is constructed such that a minimum distance from a center of said first king pin bore to a closest edge of said bottom plate is at least forty millimeters.

22. (Newly Added) The fabricated vehicle axle as defined by claim 22 wherein said minimum distance from said center of said first king pin bore to said closest edge of said bottom plate is approximately forty-five millimeters.

23. (Newly Added) The fabricated vehicle axle as defined by claim 12 wherein said first head portion includes a steering stop integrally formed therewith.

24. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said bottom plate is relatively thick and relatively heavy compared to said main body.

25. (Newly Added) The fabricated vehicle axle as defined by claim 24 wherein a section is formed by said bottom plate and said main body having a height defined by a distance between said bottom place and an opposing wall of said main body, said section further having a neutral axis positioned closer to said bottom plate than half of a height of said section.

26. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said first king pin top plate includes a head portion, a body portion and a curved fork portion.

27. (Newly Added) The fabricated vehicle axle as defined by claim 26 wherein said third king pin bore extends through said head portion of the first king pin top plate.

28. (Newly Added) The fabricated vehicle axle as defined by claim 26 wherein said curved fork portion includes a first leg and a second leg.

29. (Newly Added) The fabricated vehicle axle as defined by claim 28 wherein said first and second legs of said curved

25m

fork portion are separated.

30. (Newly Added) The fabricated vehicle axle as defined by claim 26 wherein said curved fork portion includes a bend such that said curved fork portion comprises a reversed curved fork portion.

31. (Newly Added) The fabricated vehicle axle as defined by claim 30 wherein said bend of said curved fork portion forms a ninety degree angle.

*1 cont*  
32. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said first king pin top plate is welded to said main body by weld lines having weld ends, said main body and said bottom plate define a vertical loading neutral axis of said fabricated vehicle axle, and said first king pin top plate is configured such that the weld ends are positioned above the vertical loading neutral axis.

33. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said first head portion of said bottom plate includes a machining datum.

34. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said machining datum aids during fabrication of said fabricated vehicle axle.

35. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said first king pin bore extends through said head portion of said bottom plate at a position offset to a rear of said fabricated vehicle axle.

36. (Newly Added) The fabricated vehicle axle as defined by claim 1 wherein said first king pin bore is positioned to provide additional tie rod clearance.

37. (Newly Added) The fabricated vehicle axle as defined by claim 13 further comprising a three pass weld that welds said

first end of said bottom plate to a corresponding end of said main body.

38. (Newly Added) The fabricated vehicle axle as defined by claim 37 wherein said three pass weld includes a root pass extending from a root pass first point positioned outboard of said first king pin bore to a root pass second point positioned inboard of said second bend, a second pass extending from a second pass first point positioned outboard of said first king pin bore to a second pass second point positioned inboard of said root pass second point, and a final pass extending from a final pass first point positioned outboard of said first king pin bore to a final pass second point positioned outboard of said second king pin bore.

39. (Newly Added) The fabricated vehicle axle as defined by claim 38 wherein said root pass second point is positioned between seventy-five millimeters and one hundred twenty-five millimeters inboard of said second bend.

40. (Newly Added) The fabricated vehicle axle as defined by claim 38 wherein said second pass second point is positioned between ten millimeters and thirty millimeters inboard said root pass second point.

41. (Newly Added) The fabricated vehicle axle as defined by claim 38 wherein said root pass forms a root pass weld stop at said root pass second point.

42. (Newly Added) The fabricated vehicle axle as defined by claim 41 wherein said root pass weld stop is obliterated by said second pass.

43. (Newly Added) The fabricated vehicle axle as defined by claim 38 wherein said second pass forms a second pass weld stop at said second pass second point.

44. (Newly Added) The fabricated vehicle axle as defined by claim 43 wherein said second pass weld stop is obliterated by said final pass.

45. (Newly Added) A bottom plate for a fabricated vehicle axle, comprising:

a first head portion having a first king pin bore extending through it;

a second head portion having a second king pin bore extending through it; and

a body portion positioned between said first head portion and said second head portion.

46. (Newly Added) The bottom plate as defined by claim 45 further comprising a first transition zone portion adjacent to said first head portion and extending therefrom at a first bend to a second bend at said body portion, said body portion extending from said second bend to a third bend, a second transition zone portion adjacent to said body portion and extending therefrom at said third bend, said second transition zone portion also being adjacent to said second head portion and extending therefrom at a fourth bend.

47. (Newly Added) The bottom plate as defined by claim 45 having constant thickness.

48. (Newly Added) The bottom plate as defined by claim 47 wherein said constant thickness is within a range of twelve to sixteen millimeters.

49. (Newly Added) The bottom plate as defined by claim 48 further including a first angle formed by said second bend and a second angle formed by said third bend, said first and second angles being within a range of forty degrees to fifty degrees.

50. (Newly Added) The bottom plate as defined by claim 49

wherein said first angle is forty-five degrees and said second angle is forty-five degrees.

51. (Newly Added) The bottom plate as defined by claim 46 wherein said first transition zone portion includes a tie rod clearance region.

52. (Newly Added) The bottom plate as defined by claim 51 wherein said tie rod clearance region is configured in a waist-like shape in said first transition zone portion.

53. (Newly Added) The bottom plate as defined by claim 45 being constructed such that a minimum distance from a center of said first king pin bore to a closest edge of said bottom plate is at least forty millimeters.

54. (Newly Added) The bottom plate as defined by claim 53 being constructed such that said minimum distance from said center of said first king pin bore to said closest edge of said bottom plate is approximately forty-five millimeters.

55. (Newly Added) The bottom plate as defined by claim 45 wherein said first head portion includes a steering stop integrally formed therewith.

56. (Newly Added) The bottom plate as defined by claim 45 wherein said first head portion includes a machining datum.

57. (Newly Added) The bottom plate as defined by claim 56 wherein said machining datum aids during fabrication of said fabricated vehicle axle.

58. (Newly Added) The bottom plate as defined by claim 45 wherein said first king pin bore extends through said first head portion at a position offset to a rear of said bottom plate.

59. (Newly Added) The bottom plate as defined by claim 45 wherein said first king pin bore is positioned to provide additional tie rod clearance.

60. (Newly Added) A king pin top plate for a fabricated vehicle axle, comprising:

a head portion having a king pin bore extending through it;

a body portion adjacent to said head portion; and

a curved fork portion adjacent to said body portion.

61. (Newly Added) The king pin top plate as defined by claim 60 wherein said curved fork portion includes a first leg and a second leg.

62. (Newly Added) The king pin top plate as defined by claim 61 wherein said first and second legs of said curved fork portion are separated.

63. (Newly Added) The king pin top plate as defined by claim 60 wherein said curved fork portion includes a bend such that said curved fork portion comprises a reversed curved fork portion.

64. (Newly Added) The king pin top plate as defined by claim 63 wherein said bend of said curved fork portion forms a ninety degree angle.

65. (Newly Added) A method of welding a fabricated vehicle axle having a main body and a bottom plate having a first head portion with a first king pin bore extending through it, a first transition portion adjacent to said first head portion and extending therefrom at a first bend, a body portion adjacent to said first transition portion and extending therefrom at a second bend, a second transition portion adjacent to said body portion and extending therefrom at a third bend, and a second head portion adjacent to said second transition portion and extending therefrom at a fourth bend, said second head portion having a second king pin bore extending through it,



said method comprising the steps of:

extending a first root pass weld between a first root pass first point positioned outboard said first king pin bore and a first root pass second point positioned inboard said second bend;

extending a first middle pass weld between a first middle pass first point positioned outboard said first king pin bore and a first middle pass second point positioned inboard said first root pass second point;

*1  
Reverts*  
extending a second root pass weld between a second root pass first point positioned outboard said second king pin bore and a second root pass second point positioned inboard said third bend;

extending a second middle pass weld between a second middle pass first point positioned outboard said second king pin bore and a second middle pass second point positioned inboard said second root pass second point; and

extending a final pass weld between a final pass first point positioned outboard said first king pin bore and a final pass second point positioned outboard said second king pin bore.

---

Respectfully submitted,

COOK, ALEX, MCFARRON, MANZO,  
CUMMINGS & MEHLER, LTD.

  
Michael E. McGee

Registration No. 43,789

MJM:vk  
200 West Adams Street  
Suite 2850  
Chicago, Illinois 60606  
(312) 236-8500

Dated: May 13, 2002